WHAT IS CLAIMED IS:

1. A method of transmitting and receiving at least one signal comprising:

integrating at least one encoded digital signal, wherein integrating comprises converting the at least one encoded digital signal into an at least one integrated signal that is proportional to the time integral of the at least one encoded digital signal;

transmitting the at least one integrated signal; and

receiving the at least one integrated signal following transmission and thereafter differentiating the at least one integrated signal, wherein differentiating comprises converting the at least one integrated signal into a representation of the at least one encoded digital signal that is proportional to the rate of change of the at least one integrated signal.

2. A method according to Claim 1 further comprising restoring the at least one encoded digital signal from the representation of the at least one encoded digital signal.

3. A method according to Claim 2 further comprising AC coupling the representation of the at least one encoded digital signal before restoring the at least one encoded digital signal, wherein restoring the at least one encoded digital signal comprises comparing the representation of the at least one encoded digital signal to at least one reference digital signal and thereafter setting the representation of the at least one encoded digital signal relative to the at least one reference digital signal.

4. A method according to Claim 1, wherein integrating the at least one encoded digital signal comprises low pass filtering the at least one encoded digital signal.

5. A method according to Claim 1, wherein differentiating the at least one integrated signal comprises high pass filtering the at least one integrated signal.

6. A method according to Claim 1 further comprising:

encoding at least one digital signal according to a predefined communications standard before integrating the at least one encoded digital signal; and

decoding the representation of the at least one encoded digital signal to thereby obtain a representation of the at least one digital signal, wherein decoding occurs after differentiating the at least one integrated signal.

7. A method according to Claim 6, wherein encoding comprises encoding the at least one digital signal according to a predefined communications standard having zero content at a DC voltage level.

8. A method according to Claim 7, wherein encoding comprises encoding the at least one digital signal according to a predefined communications standard selected from a group consisting of Manchester encoding, 4B5B encoding, 5B6B encoding and 8B10B encoding.

9. A method according to Claim 6, wherein decoding the representation of the at least one encoded digital signal comprises decoding the representation of the at least one encoded digital signal according to the predefined communications standard.

10. A digital communications transmitter comprising:

an encoder capable of encoding at least one digital signal according to a predefined communications standard;

an integrator capable of integrating the at least one encoded digital signal, wherein said integrator is capable of converting the at least one encoded digital signal into an at least one integrated signal that is proportional to the time integral of the at least one encoded digital signal; and

a transmitter element capable of transmitting the at least one integrated signal.

11. A digital communications transmitter according to Claim 10, wherein said encoder is capable of encoding the at least one digital signal according to a predefined communications standard that has zero content at a DC voltage level.

12. A digital communications transmitter according to Claim 11, wherein the predefined communications standard is selected from a group consisting of Manchester encoding, 4B5B encoding, 5B6B encoding and 8B10B encoding.

13. A digital communications transmitter according to Claim 10, wherein said integrator is an RC integrator comprising a low pass filter having at least one resistor and at least one capacitor.

14. A digital communications receiver comprising:

a receiver element capable of receiving at least one integrated signal, wherein the at least one integrated signal is proportional to the time integral of at least one encoded digital signal;

a differentiator capable of converting the at least one integrated signal into a representation of the at least one encoded digital signal that is proportional to the rate of change of the at least one integrated signal; and

a decoder capable of decoding the representation of the at least one encoded digital signal according to a predefined communications standard to thereby obtain a representation of at least one digital signal.

15. A digital communications receiver according to Claim 14 further comprising a comparator capable of restoring the at least one encoded digital signal from the representation of the at least one encoded digital signal, wherein said comparator is capable of restoring the at least one encoded digital signal by comparing the representation of the at least one encoded digital signal to at least one reference digital signal and thereafter setting the representation of the at least one encoded digital signal relative to the at least one reference digital signal.

16. A digital communications receiver according to Claim 15 further comprising a coupler capable of AC coupling the representation of the at least one encoded digital signal before said comparator restores the at least one encoded digital signal.

17. A digital communications receiver according to Claim 14, wherein said decoder is capable of decoding the representation of the at least one encoded digital signal according to a predefined communications standard that has zero content at a DC voltage level.

18. A digital communications system according to Claim 17, wherein the predefined communications standard is selected from a group consisting of Manchester encoding, 4B5B encoding, 5B6B encoding and 8B10B encoding.

19. A digital communications system according to Claim 14, wherein said differentiator comprises an RC differentiator comprising a high pass filter having at least one resistor and at least one capacitor.

20. A digital communications system comprising:

a transmitter capable of integrating at least one encoded digital signal, wherein said transmitter is capable of integrating the at least one encoded digital signal by converting the at least one encoded digital signal into an at least one integrated signal that is proportional to the time integral of the at least one encoded digital signal, and wherein said transmitter is capable of transmitting the at least one integrated signal; and

a receiver capable of receiving the at least one integrated signal and thereafter differentiating the at least one integrated signal into a representation of the at least one encoded digital signal that is proportional to the rate of change of the at least one integrated signal.

21. A digital communications system according to Claim 20, wherein said transmitter is further capable of encoding at least one digital signal according to a predefined communications standard to obtain the at least one encoded digital signal, and wherein said receiver is further capable of decoding the representation of the at least one encoded digital signal according to the predefined communications standard to obtain a representation of at least one digital signal.

22. A digital communications system according to Claim 20, wherein said receiver is further capable of restoring the at least one encoded digital signal from the representation of the at least one encoded digital signal.

23. A digital communications system according to Claim 22, wherein said receiver is further capable of restoring the at least one encoded digital signal by comparing the representation of the at least one encoded digital signal to at least one

reference digital signal and thereafter setting the representation of the at least one encoded digital signal relative to the at least one reference digital signal.

24. A digital communications system according to Claim 23, wherein said receiver is capable of AC coupling the representation of the at least one encoded digital signal before restoring the at least one encoded digital signal.